

CLAIMS

I claim:

1. An optical scanning apparatus comprising:  
a scanner body; and  
a self-propelled light bar assembly supported within the scanner body.
2. The optical scanning apparatus of claim 1, and further comprising a platen supported by the scanner body, and wherein the self-propelled light bar assembly comprises a drive wheel in contact with a drive track defined on the platen to allow the drive wheel to drive the light bar assembly along the platen.
3. The optical scanning apparatus of claim 1, and further comprising a drive track supported within the scanner body, and wherein the self-propelled light bar assembly comprises a drive wheel in contact with the drive track to allow the drive wheel to propel the light bar assembly with respect to the scanner body.
4. The optical scanning apparatus of claim 3, and further comprising a platen supported by the scanner body and having a first edge, and wherein the drive track is positioned adjacent to the first edge of the platen.
5. The optical scanning apparatus of claim 3, and wherein the light bar assembly comprises a biasing member configured to urge the drive wheel towards the drive track.
6. The optical scanning apparatus of claim 3, and wherein the light bar assembly is supported within the scanner body by the drive track.
7. The optical scanning apparatus of claim 3, and wherein the drive wheel includes a rubberized outer portion, and the drive track has a non-smooth surface to allow the rubberized outer portion of the drive wheel to engage the drive track.

8. The optical scanning apparatus of claim 3, and wherein:  
the light bar assembly is defined by a first end and a second end;  
the drive wheel is a first drive wheel, the drive track is a first drive track, and the first drive wheel is supported proximate the first end of the light bar assembly;  
the optical scanning apparatus further comprising:  
a second drive track supported within the scanner body; and  
a second drive wheel supported proximate the second end of the light bar assembly and in contact with the second drive track.

9. The optical scanning apparatus of claim 1, and wherein the light bar assembly comprises a rotary electric motor configured to propel the light bar assembly.

10. The optical scanning apparatus of claim 1, and wherein the light bar assembly comprises a linear electric motor configured to propel the light bar assembly.

11. An optical scanning apparatus comprising:  
a scanner body;  
a light bar assembly supported within the scanner body, the light bar assembly comprising a drive motor, a drive wheel driven by the drive motor, and wherein the drive wheel is in contact with a drive surface defined within the scanner body to allow the drive wheel to drive the light bar assembly on the drive surface relative to the scanner body.

12. The optical scanning apparatus of claim 11, and wherein the scanner body defines an inside upper surface, and wherein the drive wheel contacts the inside upper surface of the scanner body.

13. The optical scanning apparatus of claim 12, and further comprising a support surface within the scanner body, upon which the light bar assembly is supported, and wherein the light bar assembly further comprises support wheels which rest on the support surface.

14. The optical scanning apparatus of claim 13, and wherein the light bar assembly further comprises biasing members which support the support wheels on the light bar assembly, and wherein the biasing members urge the support wheels against the support surface, and thereby urge the drive wheel against the drive surface.

1 15. The optical scanning apparatus of claim 11, and further comprising a position  
2 detecting system to allow the detection of the position of the light bar assembly with  
3 respect to the scanner body.

4  
5 16. An optical scanning apparatus comprising:  
6 a scanner body;  
7 a magnet-track portion of a linear electric motor fixedly supported within the  
8 scanner body;  
9 a light bar assembly comprising a slider portion of a linear electric motor; and  
10 wherein the light bar assembly is supported in the scanner body to place the  
11 magnet-track portion in proximity to the slider portion to thereby allow the light bar  
12 assembly to be driven along the magnet-track portion.

13  
14 17. The optical scanning apparatus of claim 16, and wherein the light bar assembly is  
15 suspended from the magnet-track portion.

16  
17 18. The optical scanning apparatus of claim 16, and wherein the light bar assembly  
18 rests on top of the magnet-track portion.

19  
20 19. The optical scanning apparatus of claim 16, and wherein the light bar assembly  
21 rests on a support surface defined within the scanner body such that the slider-portion  
22 and the magnetic-track portions are not in direct contact with one another.

23  
24 20. The optical scanning apparatus of claim 16, and further comprising a position  
25 detecting system to allow the detection of the position of the light bar assembly with  
26 respect to the scanner body.

27  
28 21. The optical scanning apparatus of claim 20, and wherein the position detecting  
29 system comprises:

30 a linear encoding strip supported within the scanner body and mounted parallel to  
31 the magnet-track portion; and

32 a sensor supported by the light bar assembly and configured to detect the  
33 linear encoding strip.

- 1 22. The optical scanning apparatus of claim 16, and wherein:  
2 the light bar assembly is defined by a first end and a second end;  
3 the magnet-track portion is a first magnet-track portion, the slider portion is a first  
4 slider portion, and the slider portion is supported proximate the first end of the light bar  
5 assembly;  
6 the optical scanning apparatus further comprising:  
7 a second magnet-track portion supported within the scanner body; and  
8 a second slider portion supported proximate the second end of the light bar  
9 assembly and in contact with the second magnet track portion.
- 10
- 11 23. A method of moving a light bar assembly within a scanner body of an optical  
12 scanning apparatus comprising:  
13 providing a stationary track within the scanner body;  
14 providing a motive source supported by the light bar assembly; and  
15 moving the light bar assembly along the stationary track using the motive source.
- 16
- 17 24. The method of claim 23, and wherein the light bar assembly is moved to a  
18 plurality of positions along the stationary track, the method further comprising  
19 determining the position of the light bar assembly as it is moved along the stationary  
20 track.
- 21
- 22 25. The method of claim 23, and further comprising urging the light bar assembly  
23 against the stationary track while moving the light bar assembly along the stationary  
24 track.
- 25
- 26 26. A self-propelled light bar assembly configured to be used in an optical scanning  
27 apparatus.
- 28
- 29 27. The self-propelled light bar assembly of claim 26, and wherein the light bar  
30 assembly comprises a rotary electrical motor supported within the light bar assembly  
31 and configured to engage a drive surface within the optical scanning apparatus.
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1 28. The self-propelled light bar assembly of claim 26, and wherein the light bar  
2 assembly comprises a slider-portion of a linear electrical motor fixedly supported by the  
3 light bar assembly and configured to cooperatively engage a static portion of a linear  
4 motor which is fixedly supported within the optical scanning apparatus.  
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